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EXAMINER	
HIGGINS, GERARD T	

ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/570,803	YOON ET AL.	
	Examiner	Art Unit	
	GERARD T. HIGGINS	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 11-23* is/are pending in the application.

4a) Of the above claim(s) *12-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 March 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed 12/31/2008 has been entered. Currently claims 1-8 and 11-23 are pending, claims 12-23 are withdrawn, and claims 9 and 10 are cancelled.

2. The amendment filed 12/31/2008 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: applicants are attempting to change [0016] to say that "the heat absorption layer includes an alloy layer." This opens the possibility that the heat absorption layer is a laminate of multiple layers, which applicants are not supported for stating. The Examiner provides as evidence applicants' specification at [0033], which states that the "heat absorption layer **15** can be formed ***as*** an alloy dielectric layer...or an alloy layer." The heat absorption layer does not comprise or include an alloy layer.

Applicant is required to cancel the new matter in the reply to this Office Action.

Drawings

3. The drawings were received on 12/31/2008. These drawings are acceptable.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **12**. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The abstract of the disclosure is objected to because the phrase "occurs in at least one of the heat absorption layer ***and*** the separation layer" renders the abstract awkward. Perhaps applicants meant "occurs in at least one of the heat absorption layer ***or*** the separation layer." Correction is required. See MPEP § 608.01(b).

6. The disclosure is objected to because of the following informalities:

a. At [0019], the phrase "a dielectric layer may be included on at least one of the top ***and*** bottom of the heat absorption layer" is awkward. Perhaps applicants

meant "a dielectric layer may be included on at least one of the top ***or*** bottom of the heat absorption layer."

b. The section at [0057] is awkward because the heat absorption layer **15** is not formed of the first dielectric layer **11** and the second dielectric layer **13**. The dielectric layers are shown separate from the heat absorption layer. This section also disagrees with [0033], which states that the heat absorption layer is formed as an alloy dielectric layer or an alloy layer.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-8 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With regard to claim 1, the Examiner does not find support for stating that the "heat absorption layer…absorbs heat ***energy*** irradiated from a beam." It has been held that when an explicit limitation in a claim "is not present in the written description whose benefit is sought it must be shown that a person of ordinary skill would have

understood, at the time the patent application was filed, that the description ***requires*** that limitation" (emphasis added). *Hyatt v. Boone*, 146 F.3d 1348, 1353, 47 USPQ2d 1128, 1131 (Fed. Cir. 1998).

With regard to claim 3, the Examiner does not find support for stating that the "heat absorption layer comprises an alloy layer." Please see sections 2, 6a, and 6b above, and also [0033] in applicants' specification. There is some confusion in applicants' specification as to what the heat absorption layer may be. From the evidence seen in the Figures, particularly Figure 2, and at [0033] the Examiner interprets applicants' specification as stating that the "heat absorption layer **15** can be formed ***as*** an alloy dielectric layer...or an alloy layer."

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-8 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With further regard to claim 1, applicants state that there is a "heat absorption layer" that "absorbs heat irradiated from a beam." This renders the claim indefinite because it is clear that the layer absorbs laser light and not heat, also it is unclear how heat is irradiated from a laser beam.

With regard to claim 6, the phrase "on at least one of top ***and*** bottom surfaces of the heat absorption layer" is so awkward as to render the claim indefinite. It is unclear

what one is being asked to choose between. Perhaps applicants meant "on at least one of a top ***or*** bottom surface of the heat absorption layer."

Claim Rejections - 35 USC § 102

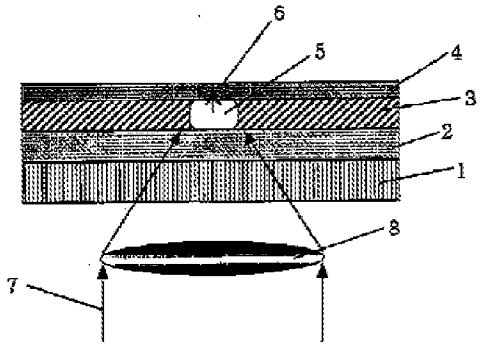
11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-3, 6, 7, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuwabara et al. (JP 2002-365806).

With regard to claim 1, Kuwabara et al. disclose a master optical disc [0002], which reads on applicants' recorded master, of the structure in Figure 1.

【図1】



The device is comprised of a substrate **1**, which reads on applicants' master substrate, an optical absorption thermal-conversion layer **3**, which reads on applicants' heat absorption layer, a substrate protective layer **2**, which reads on applicants' dielectric layer on at least one of top and bottom surfaces of the heat absorption layer, and a

feeling-of-heat reactive material layer **4** [0011], which reads on applicants' separation layer. The heating of the optical absorption thermal-conversion layer will transfer that heat to the feeling-of-heat reactive material layer as is implied by their names and as seen in the Figure (arrow showing direction of heat).

With regard to claim 2, the feeling-of-heat reactive material layer is a photoresist [0015].

With regard to claim 3, the optical absorption thermal-conversion layer is an alloy [0018].

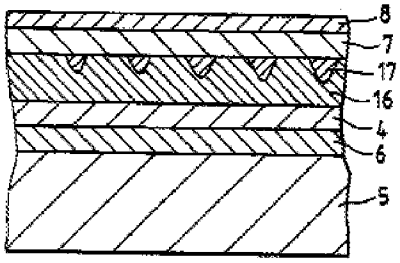
With regard to claims 6 and 7, the protective layer may be a ZnS-SiO_2 dielectric [0020].

With regard to claims 1 and 11, given that Kuwabara et al. disclose a recorded master as claimed comprised of the same types of material as claimed (i.e. alloy, photoresist, and dielectric), it is clear to the Examiner that the device of Kuwabara et al. will inherently perform the intended use limitations of claims 1 and 11.

13. Claims 1, 3-7, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Terao et al. (5,368,986).

With regard to claim 1, Terao et al. disclose the device of Figure 7.

FIG. 7



The optical medium of their invention may be considered a recorded master because the information contained within the recording layer may be reproduced and reused in the manufacture of an information storage medium (i.e. mp3 files). The device is comprised of a master substrate **8**, a heat absorption layer **16**, which is on the master substrate, and a separation layer **5** (col. 8, line 64 to col. 9, line 10 and col. 13, lines 17-36). The layer **16** has recorded data on the bumps or dents of the layer **16**, providing discrete data points.

With regard to the intended use requirement concerning the ability to form a pit of bump at specific temperatures, the Examiner notes that intended use limitations are not dispositive of patentability; furthermore, the Examiner deems these intended use limitations to be inherent in the device of Terao et al. because the Examiner has provided a separation layer, heat absorption layer, and dielectric material identical to that claimed by applicants. Since the same chemical compositions are used, they will inherently display the same effects when exposed to a temperature change.

With regard to claims 3-5, the heat absorption layer is comprised of a TbFeCo alloy (col. 13, lines 17-36).

With regard to claims 6 and 7, there may be top and bottom protection layers **7** and **4**, respectively, which are comprised of the a ZnS-SiO_2 dielectric mixture (col. 9, lines 2-5 and col. 13, lines 17-36).

With regard to claim 1 and 11, given that the Examiner has shown all the limitations of the device of claim 1 to be anticipated by Terao et al., the Examiner deems the intended use limitations of the device of claims 1 and 11 to be inherent in the device of Terao et al.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terao et al. (5,368,986), as applied to claim 1, in view of Yamada et al. (5,255,260).

Terao et al. disclose all of the limitations of applicants' claim 1 in section 13 above; however, they fail to teach a situation where the heat absorption layer is formed as an alloy dielectric layer of a dielectric and an alloy.

Yamada et al. teach forming a recording layer (heat absorption layer) of a dielectric and the recording material (col. 2, lines 39-43).

Since Terao et al. and Yamada et al. are both drawn to optical recording media; it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the dielectric and alloy materials of Terao et al. into a one layer dielectric alloy layer. The motivation would be to provide extra heat resistance from cracking or other destructive results.

16. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara et al. (JP 2002-365806), as applied to claim 1, in view of Yamada et al. (5,255,260).

Kuwabara et al. disclose all of the limitations of applicants' claim 1 in section 12 above; however, they fail to teach a situation where the heat absorption layer is formed as an alloy dielectric layer of a dielectric and an alloy.

Yamada et al. teach forming a recording layer (heat absorption layer) of a dielectric and the recording material (col. 2, lines 39-43).

Since Kuwabara et al. and Yamada et al. are both drawn to optical recording media; it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the dielectric and alloy materials of Kuwabara et al. into a one layer dielectric alloy layer. The motivation would be to provide extra heat resistance from cracking or other destructive results.

17. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara et al. (JP 2002-365806), as applied to claim 3, in view of Uchiyama et al. (4,849,304).

Kuwabara et al. disclose all of the limitations of claim 3 in section 12 above, including mentioning that GeSbTe-based alloys are good for their super-resolution alloy layer [0018]; however, they fail to disclose the type of alloy mentioned in claims 4 and 5.

Uchiyama et al. disclose that TbFeCo alloys and GeSbTe-based alloys are interchangeable in optical recording media (col. 6, lines 39-68).

Since Kuwabara et al. and Uchiyama et al. are both drawn to alloy recording material layers; it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the functional equivalents of a TbFeCo alloy seen in Uchiyama et al. with the GeSbTe-based alloy that is seen in Kuwabara et al. One of ordinary skill would look to recording layers in optical recording media when attempting to form mastering discs also with alloys.

Response to Arguments

18. Applicant's arguments, see Remarks, filed 12/31/2008, with respect to the objections to the drawings, the objections to the specification in sections 7c and 9 of the Office action mailed on 10/03/2008, and the prior art rejections based upon the Van Liempd et al. reference have been fully considered and are persuasive. The relevant objections/rejections have been withdrawn.

With regard to the Van Liempd et al. reference, the incorporation of claims 9 and 10 into claim 1 has precluded a rejection of this claim based upon Van Liempd et al. because the reference specifically teaches away from the intended use limitations of

claims 9 and 10. As such all arguments against the Van Liempd et al. reference are rendered moot.

19. Applicant's arguments filed 12/31/2008 have been fully considered but they are not persuasive.

The Examiner notes the broadest reasonable interpretation of the conjunction word "or" as provided by Merriam-Webster Online: "**4**: used in logic as a sentential connective that forms a complex sentence which is true when at least one of its constituent sentences is true."

For example, the sentence "at least one of A ***or*** B" is true when A or B are individually present, ***or*** a combination of A and B. The latter situation is true because at least one of A or B is still present when both are present. The phrase "at least one" reinforces the fact that both A and B may be present together.

Applicants wish to state that the "volume change occurs in the heat absorption layer, the separation layer, or both of the heat absorption and the separation layers" (Remarks, page 8). The Examiner notes that the word "or" accomplishes this, while the word "and" does not. The word "and" limits applicants to a volume change occurring ***only*** in the heat absorption ***and*** separation layers; further, the fact that the word "and" is combined with the phrase "at least one" renders the phrase confusing because it is unclear what "at least one" that one is being asked to choose between.

The Examiner has commented on the usage of the phrase "at least one of…***and***" in sections 5, 6a, and 10 above. Applicants' arguments in this regard are not persuasive.

Applicants argue that their amendments to [0016] of the specification and claim 3 are appropriate.

The Examiner disagrees and notes that the amendment to [0016] is new matter (section 2 above), and the amendment to claim 3 is also new matter (section 8 above). Applicants do not have a laminated heat absorption layer. The Examiner has provided evidence for his position by pointing to [0033] and Figure 2.

With regard to the rejections based upon the prior art, the Examiner would first like to comment on applicants' suggestion that the references "do not disclose, inherently," "does not disclose, inherently," "is not disclosed…inherently," and "does not teach, inherently." It is noted that inherency is not explicitly disclosed or taught. It has been held that "the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)). Please see MPEP 2112.

Given the fact that the Examiner has provided all of the materials of applicants' claim 1, the Examiner has set forth a *prima facie* case that the devices of Kuwabara et al. and Terao et al. would inherently display the intended use limitations of applicants' claims 1 and 11. Applicants have the burden of proof of establishing that the devices of Kuwabara et al. and Terao et al. could not function as claimed.

With regard to applicants' argument that considering an optical recording medium the same as a master, the Examiner notes the broadest reasonable interpretation of the term "master," as it relates to recordings, from Merriam-Webster Online: "**5b**: an original from which copies can be made." Given the prevalence of digital music storage and conversion, the Examiner deems it reasonable to consider the device of Terao et al. a recorded master.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Examiner has cited US 4,756,811, which shows a bubble-type recording medium that can also be used as a master disk for manufacture of other disks. This provides further evidence that the disc of Terao et al. can be a master disk.

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERARD T. HIGGINS whose telephone number is (571)270-3467. The examiner can normally be reached on M-F 9:30am-7pm est. (1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner
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